SCD DNA Sequence (SEQ ID NO:1)

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gtggtgtcgg tgtcggcagc atccccggcg ccctgctgcg gtcgccggag ccctcggcct     60
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cacccgttgc cagctctagc ctttaaattc ccggctcggg acctccacgc accgggctag    240
cgccgacaac cagctagcgt gcaaggcgcc gcggctcagc gcgtaccggc gggcttcgaa    300
accgcagtcc tccggcgacc ccgaactccg ctccggagcc tcagcccccc ggaaagtgat    360
cccggcatcg gagagccaag atgccggccc acttgctgca ggacgatatc tctagctcct    420
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gacgtggctt tttcttctct cacgtgggtt ggctgcttgt gcgcaaacac ccagctgtca    960
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gaaactacaa gagtggctga gtttggggtc cctcaggttc ctttttcaaa aaccagccag   1500
gcagaggttt taatgtctgt ttattaacta ctgaataatg ctaccaggat gctaaagatg   1560
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gcagctggtc agtctttgct cagtgtccag cttccaaagc ctagacaacc tttctgtagc   1800
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aaagcnaggt aaattgtcgg gggagagagt tagcatgtat gaatgtaagg atgagggaag   2040
cgaaggaacc tctcgccatg atcagacata cagctgccta cctaatgagg acttcaagcc   2100
ccaccacata gcatgcttcc tttctctcct ggctcggggt aaaaagtggc tgcggtgttt   2160
ggcaatgcta attcaatgcc gcaacatata gttgaggccg aggataaaga aaagacattt   2220
taagtttgta gtaaaagtgg tctctgctgg ggaagggttt tcttttcttt ttttctttaa   2280
taacaaggag atttcttagt tcatatatca agaagtcttg aagttgggtg tttccagaat   2340
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ctgtggcatt tccaaacatc caaaaaaagg gaaggattta aggaggtgaa gtcgggtcaa   2520
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ttccaaagag ggatgtttgg aaaaaactct gaaggagagg aggaattagt tgggatgcca   2640
atttcctctc cactgctgga catgagatgg agaggctgag ggacaggatc tataggcagc   2700
ttctaagagc gaacttcaca taggaaggga tctgagaaca cgttcagggg ttgagaaggt   2760
tactgagtga gttattggga gtcttaataa actagatatt aggtccattc attaattagt   2820
tccagtttct ccttgaaatg agtaaaaact agaaggcttc tctccacagt gttgtgcccc   2880
ttcactcatt ttttttgag gagaaggggg tctctgttaa catctagcct aaagtataca   2940
aactgcctgg ggggcagggt taggaatctc ttcactaccc tgattcttga ttcctggctc   3000
```

FIGURE 1

```
taccctgtct gtccctttc tttgaccaga tctttctctt ccctgaacgt tttcttcttt    3060
ccctggacag gcagcctcct ttgtgtgtat tcagaggcag tgatgacttg ctgtccaggc    3120
agctccctcc tgcacacaga atgctcaggg tcactgaacc actgcttctc ttttgaaagt    3180
agagctagct gccactttca cgtggcctcc gcagtgtctc cacctacacc cctgtgctcc    3240
cctgccacac tgatggctca agacaaggct ggcaaaccct cccagaaaca tctctggccc    3300
agaaagcctc tctctccctc cctctctcat gagaagccaa gcgctcatgt tgagccagtg    3360
ggccagccac agagcaaaag agggtttatt ttcagtcccc tctctctggg tcagaaccag    3420
agggcatgct gaatgccccc tgcttacttg gtgagggtgc cccgcctgag tcagtgctct    3480
cagctggcag tgcaatgctt gtagaagtag gaggaaacag ttctcactgg gaagaagcaa    3540
gggcaagaac ccaagtgcct cacctcgaaa ggaggccctg ttccctggag tcagggtgaa    3600
ctgcaaagct ttggctgaga cctgggattt gagataccac aaaccctgct gaacacagtg    3660
tctgttcagc aaactaacca gcattcccta cagcctaggg cagacaatag tatagaagtc    3720
tggaaaaaaa caaaaacaga atttgagaac cttggaccac tcctgtccct gtagctcagt    3780
catcaaagca gaagtctggc tttgctctat taagattgga aatgtacact accaaacact    3840
cagtccactg ttgagcccca gtgctggaag ggaggaaggc ctttcttctg tgttaattgc    3900
gtagaggcta caggggttag cctggactaa aggcatcctt gtctttgagc tattcacctc    3960
agtagaaaag gatctaaggg aagatcactg tagtttagtt ctgttgacct gtgcacctac    4020
cccttggaaa tgtctgctgg tatttctaat tccacaggtc atcagatgcc tgcttgataa    4080
tatataaaca ataaaaacaa ctttcacttc ttcctattgt aatcgtgtgc catggatctg    4140
atctgtacca tgaccctaca taaggctgga tggcacctca ggctgagggc cccaatgtat    4200
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tttctaacag tccttgcttt ggggggtgtg ctggcaactt agctcaggtg ccttacatct    4380
tttctaatca cagtgttgca tatgagcctg ccctcactcc ctctgcagaa tccctttgca    4440
cctgagaccc tactgaagtg gctggtagaa aaaggggcct gagtggagga ttatcagtat    4500
cacgatttgc aggattccct tctgggcttc attctggaaa cttttgttag ggctgctttt    4560
cttaagtgcc cacatttgat ggagggtgga aataatttga atgtatttga tttataagtt    4620
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aatgcttttt agaaagcatt ttgggatcct tcagcacagg aattctcaag acctgagtat    4980
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gccagacaaa atttgagaat acataaacaa cgcattgcca cggaaacata cagaggatgc    5160
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acaagaataa ttttggaata atttctatta atatcaactc tgaagctaat tgtactaatc    5280
tgagattgtg tttgttcata ataaaagtga agtgaatctg attgcactg                5329
```

FIGURE 1 (CONT.)

CA12 DNA Sequence (SEQ ID NO:2)

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gtactcgcca cggcacccag gctgcgcgca cgcggtcccg gtgtgcagct ggagagcgag      60
cggccaccgg gagcccccgg cacagcccgc gcccgccccg caggagcccg cgaagatgcc     120
ccggcgcagc ctgcacgcgg cggccgtgct cctgctggtg atcttaaagg aacagccttc     180
cagcccggcc ccagtgaacg gttccaagtg gacttatttt ggtcctgatg gggagaatag     240
ctggtccaag aagtacccgt cgtgtggggg cctgctgcag tcccccatag acctgcacag     300
tgacatcctc cagtatgacg ccagcctcac gcccctcgag ttccaaggct acaatctgtc     360
tgccaacaag cagtttctcc tgaccaacaa tggccattca gtgaagctga acctgccctc     420
ggacatgcac atccagggcc tccagtctcg ctacagtgcc acgcagctgc acctgcactg     480
ggggaacccg aatgacccgc acggctctga gcacaccgtc agcggacagc acttcgccgc     540
cgagctgcac attgtccatt ataactcaga cctttatcct gacgccagca ctgccagcaa     600
caagtcagaa ggcctcgctg tcctggctgt tctcattgag atgggctcct tcaatccgtc     660
ctatgacaag atcttcagtc accttcaaca tgtaaagtac aaaggccagg aagcattcgt     720
cccgggattc aacattgaag agctgcttcc ggagaggacc gctgaatatt accgctaccg     780
ggggtccctg accacacccc cttgcaaccc cactgtgctc tggacagttt tccgaaaccc     840
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gaggctggta tacacctcct tctcccaagt gcaagtctgt actgcggcag gactgagtct    1020
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gtccatttgg cttttcagaa ggaagagtat caaaaaaggt gataacaagg gagtcattta    1140
caagccagcc accaagatgg agactgaggc ccacgcttga ggtccccgga gctcccgggc    1200
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agaaaaaaga aaacaagaga tatacattgt gatatattag ggacactttc acagtcctgt    1800
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tctgggagag tctcactttg gaatcagaat tggaatcaca ttctgtttat caagccataa    1980
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ctgtgtcctg gaggagacat gagttccgag atgacccaat ctgcctttga atctggagga    2160
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ccctctgact ctaagaattc tctcttctgg aatcgcttga acccaggagg cggaggttgc    2700
agtaagccaa ggtcatgcca ctgcactcta gcctgggtga cagagcgaga ctccatctca    2760
aaaaaaaaaa aaaaa                                                     2775
```

FIGURE 2

PIK3R4 DNA Sequence (SEQ ID NO:3)

```
gcacgagggg agttcggcgt ttgctggggc tgcagcagct gaagtgtagt gttttcttgg      60
gactggcggt ctgcacttct ctcccgggtt ccatctcccc ccgcccggtg gtgaggccct     120
cgaggagggc tcggacgggt gtagcgatcc gcgctagagg aagacgaggc ccgggaacgc     180
atgtccccca gggcaggtta gggggctgga ggggtcaaat cccggggtac ttgtggagac     240
tctttagcgt ggcttcttct ctctgctgag accccgagag ctttcccagt tctcctccca     300
ggaccaccgg ggttcctgaa gatcgggact tttctgcgcc cctccaccaa cagcccatct     360
cctgtctatg aagaaagacc cttcgtagaa acaacttccc cgctgctgac gcgttttccc     420
gtcccgtccc cgaagtagtc tactatgacc tcgttgtgag cctctgaacg attttgacac     480
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ccacattgcc tttaaccagc tataaacaag agctggagga actgaaaatc aggcttaatt     780
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tgctctttag gcagtatgtg cgagacaatc tctatgatcg catcagtacc cgtccattct     900
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attgggttct tctaactgat tttgccagtt ttaagcccac ttatcttcca gaagacaacc    1080
cggcagattt caattatttc tttgacacat cacggaggag aacttgctat attgctcctg    1140
aacgttttgt tgatggtggg atgtttgcca ctgagttaga atatatgaga gatccttcaa    1200
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gcttgttcag acatcttcac atgcgtcaga agaaacgaaa tggttctctt cccgactgcc    2820
ctccgccaga ggatcctgcc atagcacagc ttctgaagaa gttgctctca cagggaatga    2880
cagaggaaga ggaagacaaa cttctggcac tgaaagactt catgatgaaa tctaataaag    2940
caaaggccaa tatagtggac cagagccatc ttcatgatag tagtcagaaa ggtgtaattg    3000
```

FIGURE 3

```
acttggcagc tttaggcata actgggagac aagttgatct tgttaaaacc aaacaagaac    3060
cagatgacaa acgggccaga aaacatgtaa aacaagactc aaatgtaaat gaagaatgga    3120
aaagcatgtt tgggtcactg gacccaccaa acatgccaca ggccctacct aaagggagtg    3180
atcaggaggt gattcagact gggaaacctc ctcgttccga gtcctctgct ggcatttgtg    3240
tccctttgtc aacttcttca caggttccag aagtgacaac tgtccaaaat aaaaaaccag    3300
taataccggt tttaagtagt acaatcttac catccaccta tcagattcga attacaactt    3360
gtaaaactga acttcagcaa ctcatccagc aaaagcggga gcagtgcaat gctgagagaa    3420
tagctaagca gatgatggaa aatgctgaat gggagagtaa accaccacca cctggatggc    3480
gtcctaaagg gctgttagtt gcccatcttc atgagcataa atctgctgtg aatcgaatta    3540
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gcccagagtc cctgcccgtg ggacatcatg acatcatcac tgatgtcgcc acattccaga    4560
ccacacaggg cttcatcgta actgcttcta gagatgggat tgtgaaggtg tggaaataaa    4620
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catttctaga gaacagattc atttgcttaa ttttcaaaat tatgtctcca tattactgtt    4740
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gttgaaaaga tggttgtaag ctattatagt ataaacacat ttttgctatt aaaaatgcta    4980
ttcaaagcag ttaaactgta aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaac    5040
tcgaggggggg gcccggtacc                                              5060
```

FIGURE 3 (CONT.)

PLD3 DNA Sequence (SEQ ID NO:4)

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ctctttataa tttagtttcc atagaagtta tatgtgcatt taaaaaaatt caatgctgga      60
gcgaccgtgt ctggggagcc gagccccgct tctcgctgcg gtgagcccgg actggggcac     120
gcactgcgca gactccccgc tgcagtgggc ggagtcccac aggccccgcc cctcctccca     180
ccctcgttca gcctgtccag acagaagctg gggcccagcg gaggtagcag cagacgcctg     240
agagcgaggc cgaggccctc agggtttgga gaccctgaca cacccacctt ctcacctggg     300
ctctgcgtat cccccagcct tgagggaaga tgaagcctaa actgatgtac caggagctga     360
aggtgcctgc agaggagccc gccaatgagc tgcccatgaa tgagattgag gcgtggaagg     420
ctgcggaaaa gaaagcccgc tgggtcctgc tggtcctcat tctggcggtt gtgggcttcg     480
gagcctgatg actcagctgt ttctatggga atacggcgac ttgcatctct ttgggcccaa     540
ccagcgccca gccccctgct atgacccttg cgaagcagtg ctggtggaaa gcattcctga     600
gggcctggac ttccccaatg cctccacggg gaacccttcc accagccagg cctggctggg     660
cctgctcgcc ggtgcgcaca gcagcctgga catcgcctcc ttctactgga ccctcaccaa     720
caatgacacc cacacgcagg agccctctgc ccagcagggt gaggaggtcc tccggcagct     780
gcagaccctg gcaccaaagg gcgtgaacgt ccgcatcgct gtgagcaagc ccagcgggcc     840
ccagccacag gcggacctgc aggctctgct gcagagcggt gcccaggtcc gcatggtgga     900
catgcagaag ctgacccatg gcgtcctgca taccaagttc tgggtggtgg accagaccca     960
cttctacctg ggcagtgcca acatggactg gcgttcactg acccaggtca aggagctggg    1020
cgtggtcatg tacaactgca gctgcctggc tcgagacctg accaagatct ttgaggccta    1080
ctggttcctg ggccaggcag gcagctccat cccatcaact tggccccggt tctatgacac    1140
ccgctacaac caagagacac caatggagat ctgcctcaat ggaacccctg ctctggccta    1200
cctggcgagt gcgcccccac ccctgtgtcc aagtggccgc actccagacc tgaaggctct    1260
actcaacgtg gtggacaatg cccggagttt catctacgtc gctgtcatga actacctgcc    1320
cactctggag ttctcccacc ctcacaggtt ctggcctgcc attgacgatg ggctgcggcg    1380
ggccacctac gagcgtggcg tcaaggtgcg cctgctcatc agctgctggg gacactcgga    1440
gccatccatg cgggccttcc tgctctctct ggctgccctg cgtgacaacc atacccactc    1500
tgacatccag gtgaaactct ttgtggtccc cgcggatgag gcccaggctc gaatcccata    1560
tgcccgtgtc aaccacaaca agtacatggt gactgaacgc gccacctaca tcggaacctc    1620
caactggtct ggcaactact tcacggagac ggcgggcacc tcgctgctgg tgacgcagaa    1680
tgggaggggc ggcctgcgga gccagctgga ggccattttc ctgagggact gggactcccc    1740
ttacattcat gaccttgaca cctcagctga cagcgtgggc aacgcctgcc gcctgctctg    1800
aggcccgatc cagtgggcag gccaaggcct gctgggcccc cgcggaccca ggtgctctgg    1860
gtcacggtcc ctgtccccgc accccgcttt ctgtctgccc cattgtggct cctcaggctc    1920
tctcccctgc tctcccacct ctacctccac ccccaccggc ctgacgctgt ggccccggga    1980
cccagcagag ctgggggagg gatcagcccc caaagaaatg ggggtgcatg ctggcctgcc    2040
ccctggccca cccccacttt ccagggcaaa aagggcccag ggttataata agtaaataac    2100
ttgtctgtaa aaaaaaaaaa aaaaaaaaaa a
```

FIGURE 4

HSPD1 DNA Sequence (SEQ ID NO:5)

```
ggcacgaggc gacgacctgt ctcgccgagc gcacgccttg ccgccgcccc gcagaaatgc      60
ttcggttacc cacagtcttt cgccagatga gaccggtgtc cagggtactg gctcctcatc     120
tcactcgggc ttatgccaaa gatgtaaaat ttggtgcaga tgcccgagcc ttaatgcttc     180
aaggtgtaga ccttttagcc gatgctgtgg ccgttacaat ggggccaaag ggaagaacag     240
tgattattga gcagagttgg ggaagtccca aagtaacaaa agatggtgtg actgttgcaa     300
agtcaattga cttaaaagat aaatacaaaa acattggagc taaacttgtt caagatgttg     360
ccaataacac aaatgaagaa gctggggatg gcactaccac tgctactgta ctggcacgct     420
ctatagccaa ggaaggcttc gagaagatta gcaaaggtgc taatccagtg gaaatcagga     480
gaggtgtgat gttagctgtt gatgctgtaa ttgctgaact taaaaagcag tctaaacctg     540
tgaccacccc tgaagaaatt gcacaggttg ctacgatttc tgcaaacgga gacaaagaaa     600
ttggcaatat catctctgat gcaatgaaaa aagttggaag aaagggtgtc atcacagtaa     660
aggatggaaa aacactgaat gatgaattag aaattattga aggcatgaag tttgatcgag     720
gctatatttc tccatacttt attaatacat caaaaggtca gaaatgtgaa ttccaggatg     780
cctatgttct gttgagtgaa aagaaaattt ctagtatcca gtccattgta cctgctcttg     840
aaattgccaa tgctcaccgt aagcctttgg tcataatcgc tgaagatgtt gatggagaag     900
ctctaagtac actcgtcttg aataggctaa aggttggtct tcaggttgtg gcagtcaagg     960
ctccagggtt tggtgacaat agaaagaacc agcttaaaga tatggctatt gctactggtg    1020
gtgcagtgtt tggagaagag ggattgaccc tgaatcttga agacgttcag cctcatgact    1080
taggaaaagt tggagaggtc attgtgacca aagacgatgc catgctctta aaaggaaaag    1140
gtgacaaggc tcaaattgaa aaacgtattc aagaaatcat tgagcagtta gatgtcacaa    1200
ctagtgaata tgaaaaggaa aaactgaatg aacggcttgc aaaactttca gatggagtgg    1260
ctgtgctgaa ggttggtggg acaagtgatg ttgaagtgaa tgaaaagaaa gacagagtta    1320
cagatgccct taatgctaca agagctgctg ttgaagaagg cattgttttg ggagggggtt    1380
gtgccctcct tcgatgcatt ccagccttgg actcattgac tccagctaat gaagatcaaa    1440
aaattggtat agaaattatt aaaagaacac tcaaaattcc agcaatgacc.attgctaaga    1500
atgcaggtgt tgaaggatct ttgatagttg agaaaattat gcaaagttcc tcagaagttg    1560
gttatgatgc tatggctgga gattttgtga atatggtgga aaaaggaatc attgacccaa    1620
caaaggttgt gagaactgct ttattggatg ctgctggtgt ggcctctctg ttaactacag    1680
cagaagttgt agtcacagaa attcctaaag aagagaagga ccctggaatg ggtgcaatgg    1740
gtggaatggg aggtggtatg ggaggtggca tgttctaact cctagactag tgctttacct    1800
ttattaatga actgtgacag gaagcccaag gcagtgttcc tcaccaataa cttcagagaa    1860
gtcagttgga gaaaatgaag aaaaaggctg gctgaaaatc actataacca tcagttactg    1920
gtttcagttg acaaaatata taatggttta ctgctgtcat tgtccatgcc tacagataat    1980
ttattttgta tttttgaata aaaaacattt gtacattcct gatactgggt acaagagcca    2040
tgtaccagtg tactgctttc aacttaaatc actgaggcat ttttactact attctgttaa    2100
aatcaggatt ttagtgcttg ccaccaccag atgagaagtt aagcagcctt tctgtggaga    2160
gtgagaataa ttgtgtacaa agtagagaag tatccaatta tgtgacaacc tttgtgtaat    2220
aaaaatttgt ttaaagttaa aaaaaaaaaa aaaaaaaa                            2258
```

FIGURE 5

ZPK Variant 2 DNA Sequence (SEQ ID NO:6)

```
agcatccgga gcggagctgc agcagcgccg ccttttgtgc tgcggccgcg gagccccga      60
gggcccagtg ttcaccatca taccaggggc cagaggcgat ggcttgcctc catgagaccc     120
gaacaccctc tccttccttt gggggctttg tgtctaccct aagtgaggca tccatgcgca     180
agctggaccc agacacttct gactgcactc ccgagaagga cctgacgcct acccatgtcc     240
tgcagctaca tgagcaggat gcaggggccc caggggagc agctgggtca cctgagagtc      300
gggcatccag agttcgagct gacgaggtgc gactgcagtg ccagagtggc agtggcttcc     360
ttgagggcct ctttggctgc ctgcgccctg tctggaccat gattggcaaa gcctactcca     420
ctgagcacaa gcagcagcag gaagaccttt gggaggtccc ctttgaggaa atcctggacc     480
tgcagtgggt gggctcaggg gcccagggtg ctgtcttcct ggggcgcttc cacggggagg     540
aggtggctgt gaagaaggtg cgagacctca aagaaaccga catcaagcac ttgcgaaagc     600
tgaagcaccc caacatcatc actttcaagg gtgtgtgcac ccaggctccc tgctactgca     660
tcctcatgga gttctgcgcc cagggccagc tgtatgaggt actgcgggct ggccgccctg     720
tcaccccctc cttactggtt gactggtcca tgggcatcgc tggtggcatg aactacctgc     780
acctgcacaa gattatccac agggatctca agtcacccaa catgctaatc acctacgacg     840
atgtggtgaa gatctcagat tttggcactt ccaaggagct gagtgacaag agcaccaaga     900
tgtcctttgc agggacagta gcctggatgg cccctgaggt gatccgcaat gaacctgtgt     960
ctgagaaggt cgacatctgg tcctttggcg tggtgctatg ggaactgctg actggtgaga    1020
tcccctacaa agacgtagat tcctcagcca ttatctgggg tgtgggaagc aacagtctcc    1080
atctgcccgt gccctccagt tgcccagatg gtttcaagat cctgcttcgc cagtgctgga    1140
atagcaaacc acgaaatcgc ccatcattcc gacagatcct gctgcatctg gacattgcct    1200
cagctgatgt actctccaca ccccaggaga cttactttaa gtcccaggca gagtggcggg    1260
aagaagtaaa actgcacttt gaaaagatta agtcagaagg gacctgtctg caccgcctag    1320
aagaggaact ggtgatgagg aggagggagg agctcagaca cgccctggac atcagggagc    1380
actatgaaag gaagctggag agagccaaca acctgtatat ggaacttaat gccctcatgt    1440
tgcagctgga actcaaggag agggagctgc tcaggcgaga gcaagcttta gagcggaggt    1500
gcccaggcct gctgaagcca cacccttccc ggggcctcct gcatggaaac acaatggaga    1560
agcttatcaa gaagaggaat gtgccacaga agctgtcacc ccatagcaaa aggccagata    1620
tcctcaagac ggagtctttg ctccctaaac tagatgcagc cctgagtggg gtggggcttc    1680
ctgggtgtcc taaggccccc ccctcaccag gacggagtcg ccgtggcaag acccgtcacc    1740
gcaaggccag cgccaagggg agctgtgggg acctgcctgg gcttcgtaca gctgtgccac    1800
cccatgaacc tggaggacca ggaagcccag ggggcctagg agggggaccc tcagcctggg    1860
aggcctgccc tcccgccctc cgtgggcttc atcatgacct cctgctccgc aaaatgtctt    1920
catcgtcccc agacctgctg tcagcagcac tagggtcccg gggccggggg gccacaggcg    1980
gagctgggga tcctggctca ccacctccgg cccggggtga caccccacca agtgagggct    2040
cagcccctgg ctccaccagc ccagattcac ctgggggagc caaaggggaa ccacctcctc    2100
cagtagggcc tggtgaaggt gtggggcttc tgggaactgg aagggaaggg acctcaggcc    2160
ggggaggaag ccgggctggg tcccagcact tgaccccagc tgcactgctg tacagggctg    2220
ccgtcacccg aagtcagaaa cgtggcatct catcggaaga ggaggaagga gaggtagaca    2280
gtgaagtaga gctgacatca agccagaggt ggcctcagag cctgaacatg cgccagtcac    2340
tatctacctt cagctcagag aatccatcag atggggagga aggcacagct agtgaacctt    2400
cccccagtgg cacacctgaa gttggcagca ccaacactga tgagcggcca gatgagcggt    2460
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gccctcccaa ttctgaggac tcagactgtg acagcactga attggacaac tccaacagcg    2640
ttgatgcctt gcggccccca gcttccctcc ctccatgaaa gccactcgta ttccttgtac    2700
atagagaaat atttatatgg attatatata tatacatata tatatatata tgcgccacat    2760
aatcaacaga aagatggggc tgtcccagcc gtaagtcagg ctcgagggag actgatcccc    2820
tgaccaattc acctgataaa ctctagggac actggcagct gtggaaatga atgaggcaca    2880
gccgtagagc tgtggctaag ggcaagcccc ttcctgcccc accccattcc ttatattcag    2940
caagcaacaa ggcaatagaa aagccagggt tgtctttata ttctttatcc ccaaataata    3000
gggggtgggg ggaggggcgg tgggaggggc aggagagaaa accacttaga ctgcactttt    3060
ctgttccgtt tactctgttt acacattttg cacttgggag gagggaggct aaggctgggt    3120
cctcccctct gaggtttctc aggtggcaat gtaactcatt tttttgtccc accatttatc    3180
ttctctgccc aagccctgtc ttaaggccca gggggaggtt aggagactga tagcatgtga    3240
tggctcaggc tgaagaaccg gggtgctgtt taagtccctg cttttatcct ggtgcctgat    3300
tggggtgggg actgtcctac tgtaacccct gtgaaaaacc ttgaaatata acactccatg    3360
cagga                                                               3365
```

FIGURE 6

SCD Amino Acid Sequence (SEQ ID NO:7)

```
MPAHLLQDDI SSSYTTTTTI TAPPSRVLQN GGDKLETMPL YLEDDIRPDI KDDIYDPTYK      60
DKEGPSPKVE YVWRNIILMS LLHLGALYGI TLIPTCKFYT WLWGVFYYFV SALGITAGAH     120
RLWSHRSYKA RLPLRLFLII ANTMAFQNDV YEWARDHRAH HKFSETHADP HNSRRGFFFS     180
HVGWLLVRKH PAVKEKGSTL DLSDLEAEKL VMFQRRYYKP GLLLMCFILP TLVPWYFWGE     240
TFQNSVFVAT FLRYAVVLNA TWLVNSAAHL FGYRPYDKNI SPRENILVSL GAVGEGFHNY     300
HHSFPYDYSA SEYRWHINFT TFFIDCMAAL GLAYDRKKVS KAAILARIKR TGDGNYKSG      359
```

FIGURE 7

CA12 Amino Acid Sequence (SEQ ID NO:8)

```
MPRRSLHAAA VLLLVILKEQ PSSPAPVNGS KWTYFGPDGE NSWSKKYPSC GGLLQSPIDL      60
HSDILQYDAS LTPLEFQGYN LSANKQFLLT NNGHSVKLNL PSDMHIQGLQ SRYSATQLHL     120
HWGNPNDPHG SEHTVSGQHF AAELHIVHYN SDLYPDASTA SNKSEGLAVL AVLIEMGSFN     180
PSYDKIFSHL QHVKYKGQEA FVPGFNIEEL LPERTAEYYR YRGSLTTPPC NPTVLWTVFR     240
NPVQISQEQL LALETALYCT HMDDPSPREM INNFRQVQKF DERLVYTSFS QVQVCTAAGL     300
SLGIILSLAL AGILGICIVV VVSIWLFRRK SIKKGDNKGV IYKPATKMET EAHA           354
```

FIGURE 8

PIK3R4 Amino Acid Sequence (SEQ ID NO:9)

```
MGNQLAGIAP SQILSVESYF SDIHDFEYDK SLGSTRFFKV ARAKHREGLV VVKVFAIQDP      60
TLPLTSYKQE LEELKIRLNS AQNCLPFQKA SEKASEKAAM LFRQYVRDNL YDRISTRPFL     120
NNIEKRWIAF QILTAVDQAH KSGVRHGDIK TENVMVTSWN WVLLTDFASF KPTYLPEDNP     180
ADFNYFFDTS RRRTCYIAPE RFVDGGMFAT ELEYMRDPST PLVDLNSNQR TRGELKRAMD     240
IFSAGCVIAE LFTEGVPLFD LSQLLAYRNG HFFPEQVLNK IEDHSIRELV TQMIHREPDK     300
RLEAEDYLKQ QRGNAFPEIF YTFLQPYMAQ FAKETFLSAD ERILVIRKDL GNIIHNLCGH     360
DLPEKAEGEP KENGLVILVS VITSCLQTLK YCDSKLAALE LILHLAPRLS VEILLDRITP     420
YLLHFSNDSV PRVRAEALRT LTKVLALVKE VPRNDINIYP EYILPGIAHL AQDDATIVRL     480
AYAENIALLA ETALRFLELV QLKNLNMEND PNNEEIDEVT HPNGNYDTEL QALHEMVQQK     540
VVTLLSDPEN IVKQTLMENG ITRLCVFFGR QKANDVLLSH MITFLNDKND WHLRGAFFDS     600
IVGVAAYVGW QSSSILKPLL QQGLSDAEEF VIVKALYALT CMCQLGLLQK PHVYEFASDI     660
APFLCHPNLW IRYGAVGFIT VVARQISTAD VYCKLMPYLD PYITQPIIQI ERKLVLLSVL     720
KEPVSRSIFD YALRSKDITS LFRHLHMRQK KRNGSLPDCP PPEDPAIAQL LKKLLSQGMT     780
EEEEDKLLAL KDFMMKSNKA KANIVDQSHL HDSSQKGVID LAALGITGRQ VDLVKTKQEP     840
DDKRARKHVK QDSNVNEEWK SMFGSLDPPN MPQALPKGSD QEVIQTGKPP RSESSAGICV     900
PLSTSSQVPE VTTVQNKKPV IPVLSSTILP STYQIRITTC KTELQQLIQQ KREQCNAERI     960
AKQMMENAEW ESKPPPPGWR PKGLLVAHLH EHKSAVNRIR VSDEHSLFAT CSNDGTVKIW    1020
NSQKMEGKTT TTRSILTYSR IGGRVKTLTF CQGSHYLAIA SDNGAVQLLG IEASKLPKSP    1080
KIHPLQSRIL DQKEDGCVVD MHHFNSGAQS VLAYATVNGS LVGWDLRSSS NAWTLKHDLK    1140
SGLITSFAVD IHQCWLCIGT SSGTMACWDM RFQLPISSHC HPSRARIRRL SMHPLYQSWV    1200
IAAVQGNNEV SMWDMETGDR RFTLWASSAP PLSELQPSPH SVHGIYCSPA DGNPILLTAG    1260
SDMKIRFWDL AYPERSYVVA GSTSSPSVSY YRKIIEGTEV VQEIQNKQKV GPSDDTPRRG    1320
PESLPVGHHD IITDVATFQT TQGFIVTASR DGIVKVWK                            1358
```

FIGURE 9

PLD3 Amino Acid Sequence (SEQ ID NO:10)

```
MTQLFLWEYG DLHLFGPNQR PAPCYDPCEA VLVESIPEGL DFPNASTGNP STSQAWLGLL    60
AGAHSSLDIA SFYWTLTNND THTQEPSAQQ GEEVLRQLQT LAPKGVNVRI AVSKPSGPQP   120
QADLQALLQS GAQVRMVDMQ KLTHGVLHTK FWVVDQTHFY LGSANMDWRS LTQVKELGVV   180
MYNCSCLARD LTKIFEAYWF LGQAGSSIPS TWPRFYDTRY NQETPMEICL NGTPALAYLA   240
SAPPPLCPSG RTPDLKALLN VVDNARSFIY VAVMNYLPTL EFSHPHRFWP AIDDGLRRAT   300
YERGVKVRLL ISCWGHSEPS MRAFLLSLAA LRDNHTHSDI QVKLFVVPAD EAQARIPYAR   360
VNHNKYMVTE RATYIGTSNW SGNYFTETAG TSLLVTQNGR GGLRSQLEAI FLRDWDSPYI   420
HDLDTSADSV GNACRLL                                                  437
```

FIGURE 10

HSPD1 Amino Acid Sequence (SEQ ID NO:11)

```
MLRLPTVFRQ MRPVSRVLAP HLTRAYAKDV KFGADARALM LQGVDLLADA VAVTMGPKGR    60
TVIIEQSWGS PKVTKDGVTV AKSIDLKDKY KNIGAKLVQD VANNTNEEAG DGTTTATVLA   120
RSIAKEGFEK ISKGANPVEI RRGVMLAVDA VIAELKKQSK PVTTPEEIAQ VATISANGDK   180
EIGNIISDAM KKVGRKGVIT VKDGKTLNDE LEIIEGMKFD RGYISPYFIN TSKGQKCEFQ   240
DAYVLLSEKK ISSIQSIVPA LEIANAHRKP LVIIAEDVDG EALSTLVLNR LKVGLQVVAV   300
KAPGFGDNRK NQLKDMAIAT GGAVFGEEGL TLNLEDVQPH DLGKVGEVIV TKDDAMLLKG   360
KGDKAQIEKR IQEIIEQLDV TTSEYEKEKL NERLAKLSDG VAVLKVGGTS DVEVNEKKDR   420
VTDALNATRA AVEEGIVLGG GCALLRCIPA LDSLTPANED QKIGIEIIKR TLKIPAMTIA   480
KNAGVEGSLI VEKIMQSSSE VGYDAMAGDF VNMVEKGIID PTKVVRTALL DAAGVASLLT   540
TAEVVVTEIP KEEKDPGMGA MGGMGGGMGG GMF                                573
```

FIGURE 11

ZPK Variant 2 Amino Acid Sequence (SEQ ID NO:12)

```
MACLHETRTP SPSFGGFVST LSEASMRKLD PDTSDCTPEK DLTPTHVLQL HEQDAGGPGG    60
AAGSPESRAS RVRADEVRLQ CQSGSGFLEG LFGCLRPVWT MIGKAYSTEH KQQQEDLWEV   120
PFEEILDLQW VGSGAQGAVF LGRFHGEEVA VKKVRDLKET DIKHLRKLKH PNIITFKGVC   180
TQAPCYCILM EFCAQGQLYE VLRAGRPVTP SLLVDWSMGI AGGMNYLHLH KIIHRDLKSP   240
NMLITYDDVV KISDFGTSKE LSDKSTKMSF AGTVAWMAPE VIRNEPVSEK VDIWSFGVVL   300
WELLTGEIPY KDVDSSAIIW GVGSNSLHLP VPSSCPDGFK ILLRQCWNSK PRNRPSFRQI   360
LLHLDIASAD VLSTPQETYF KSQAEWREEV KLHFEKIKSE GTCLHRLEEE LVMRRREELR   420
HALDIREHYE RKLERANNLY MELNALMLQL ELKERELLRR EQALERRCPG LLKPHPSRGL   480
LHGNTMEKLI KKRNVPQKLS PHSKRPDILK TESLLPKLDA ALSGVGLPGC PKAPPSPGRS   540
RRGKTRHRKA SAKGSCGDLP GLRTAVPPHE PGGPGSPGGL GGGPSAWEAC PPALRGLHHD   600
LLLRKMSSSS PDLLSAALGS RGRGATGGAG DPGSPPPARG DTPPSEGSAP GSTSPDSPGG   660
AKGEPPPPVG PGEGVGLLGT GREGTSGRGG SRAGSQHLTP AALLYRAAVT RSQKRGISSE   720
EEEGEVDSEV ELTSSQRWPQ SLNMRQSLST FSSENPSDGE EGTASEPSPS GTPEVGSTNT   780
DERPDERSDD MCSQGSEIPL DPPPSEVIPG PEPSSLPIPH QELLRERGPP NSEDSDCDST   840
ELDNSNSVDA LRPPASLPP                                                859
```

FIGURE 12

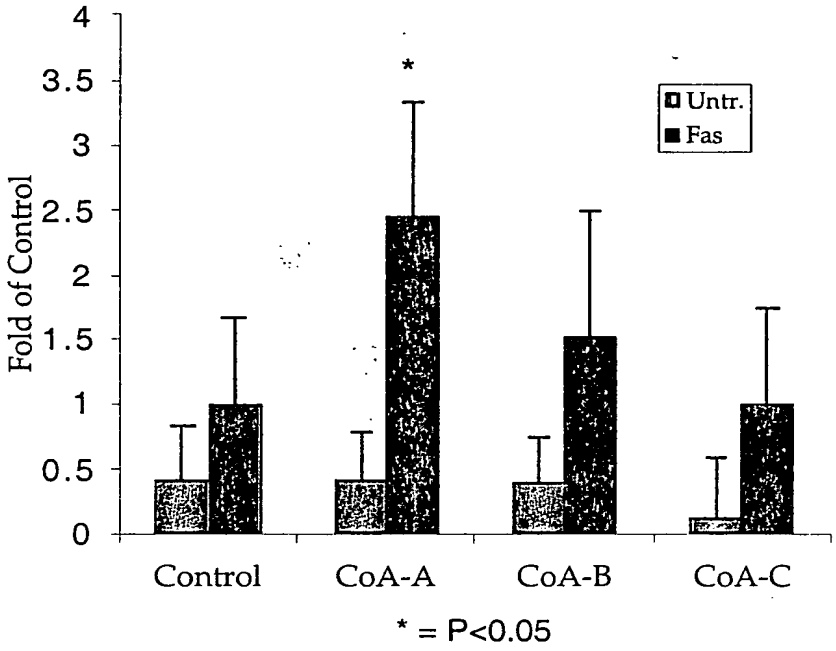

FIGURE 13A

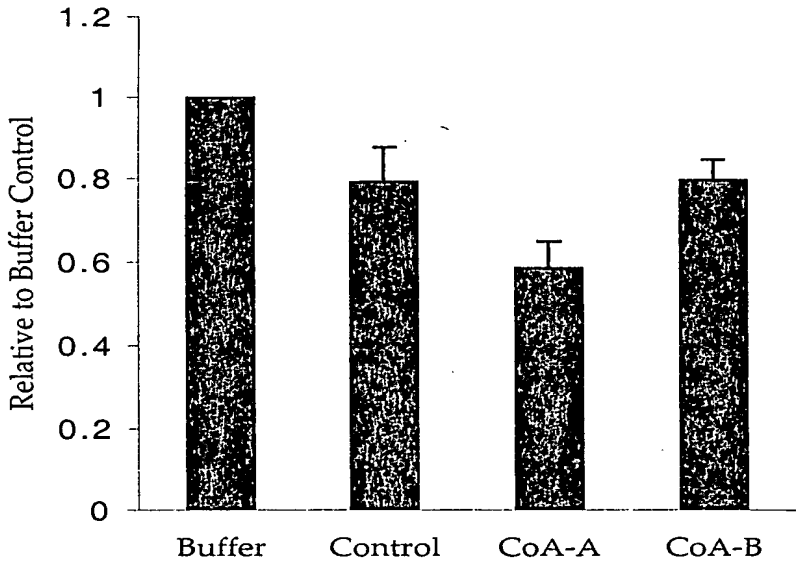

FIGURE 13B

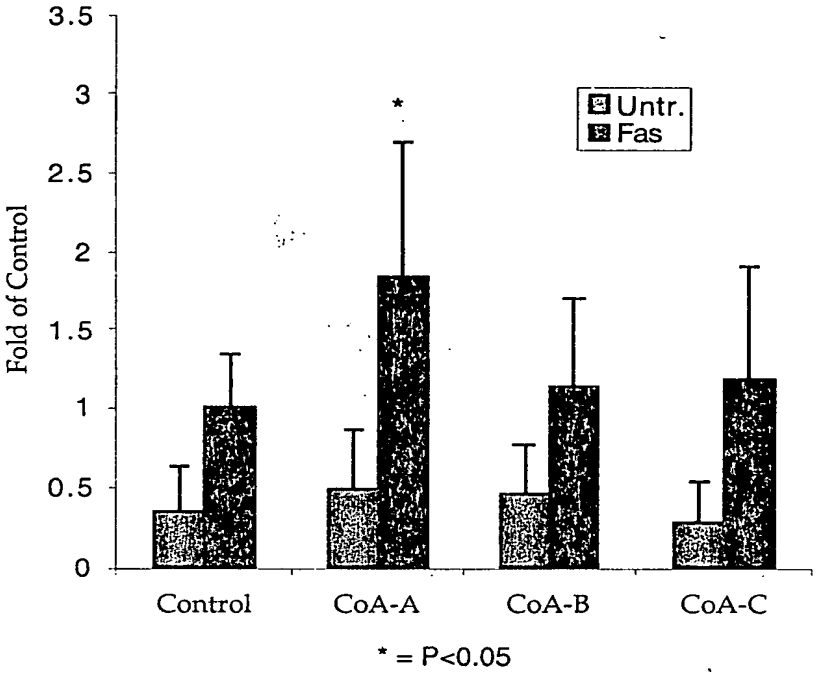

FIGURE 14A

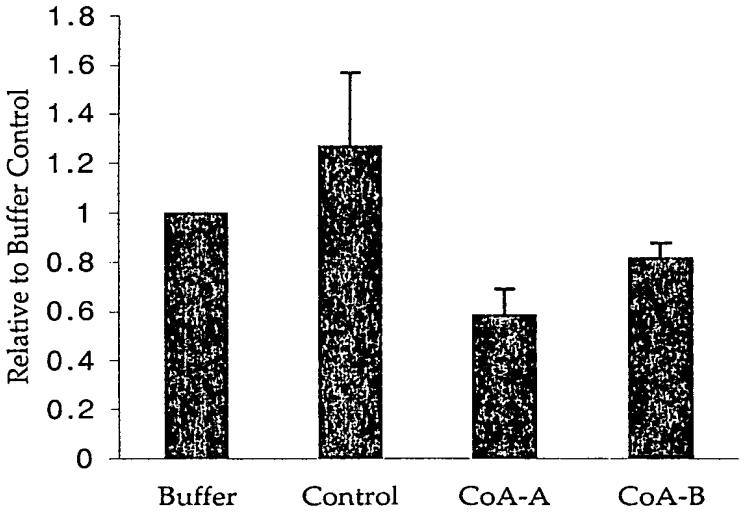

FIGURE 14B

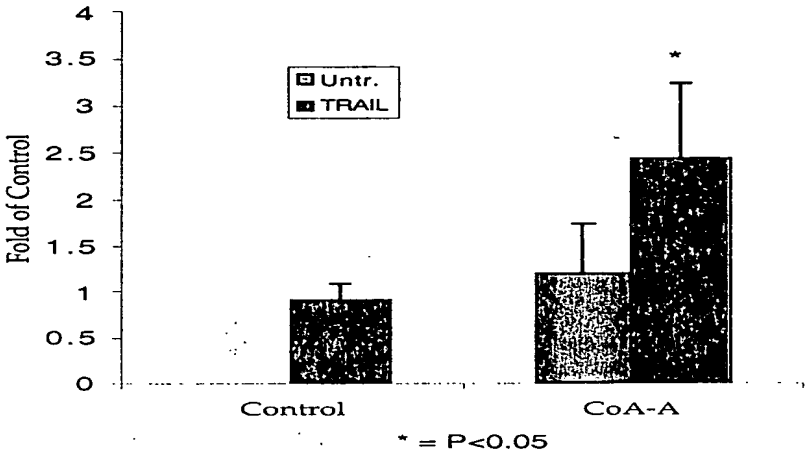

FIGURE 15A

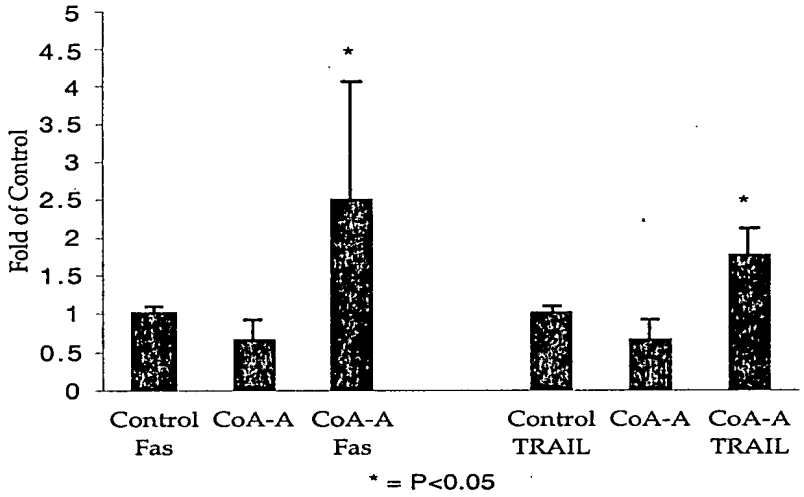

FIGURE 15B

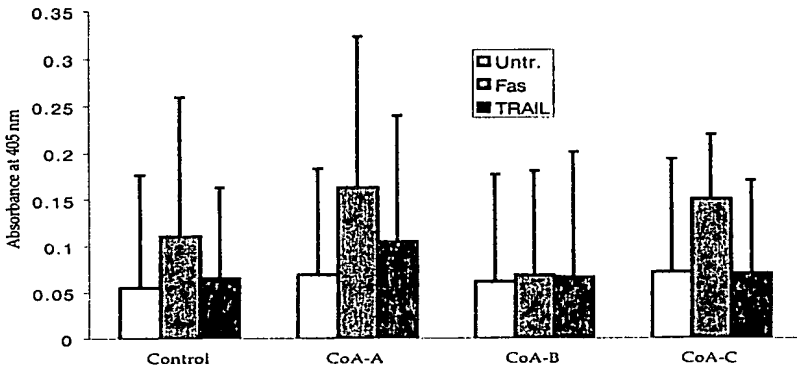

FIGURE 16

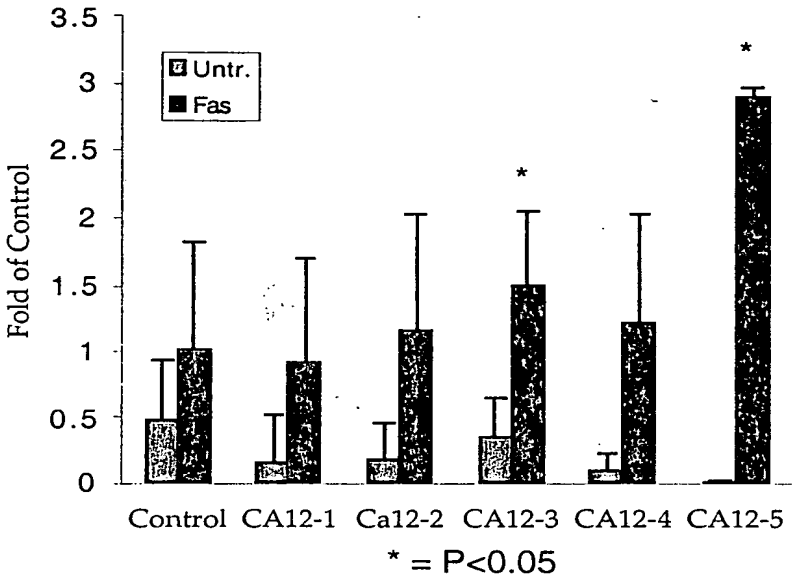

FIGURE 17A

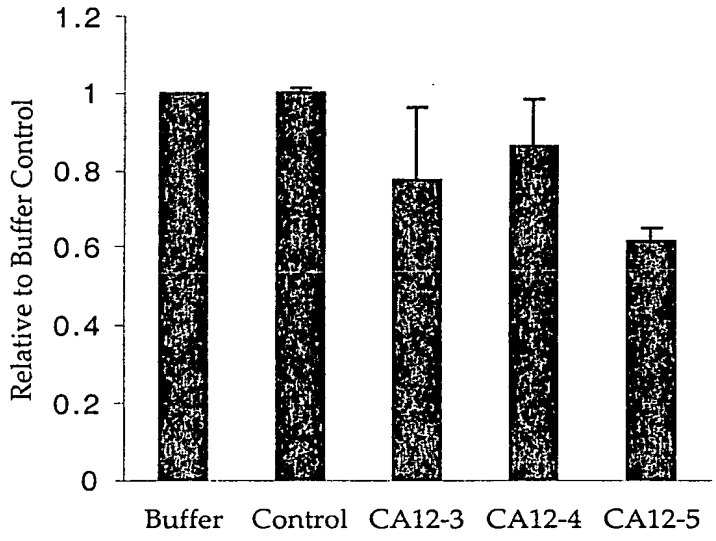

FIGURE 17B

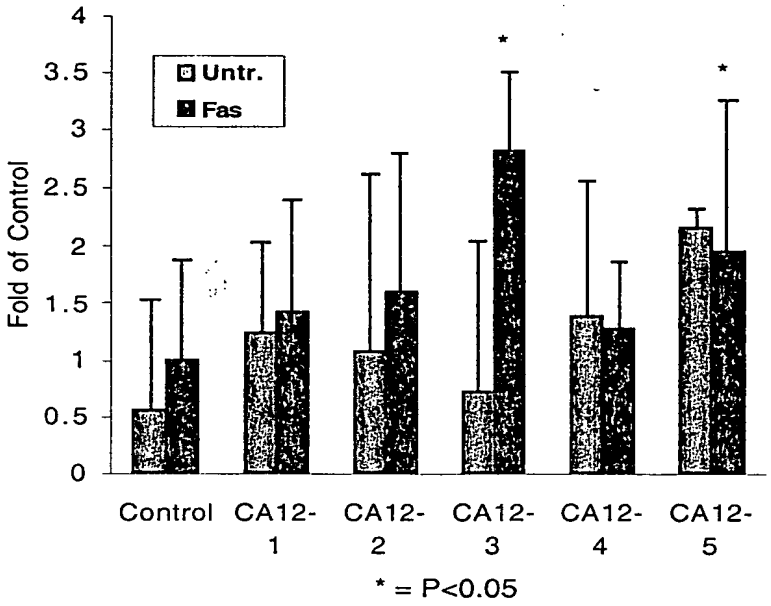

FIGURE 18A

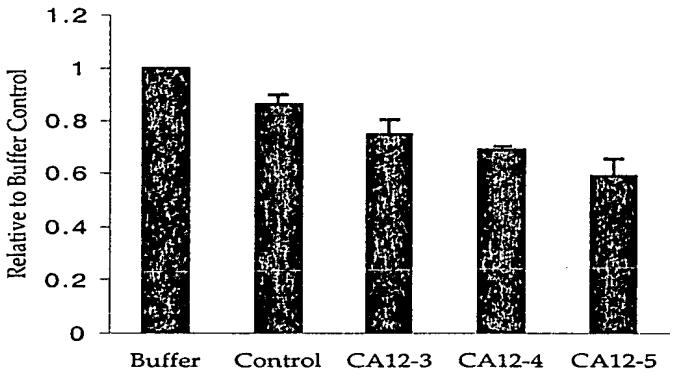

FIGURE 18B

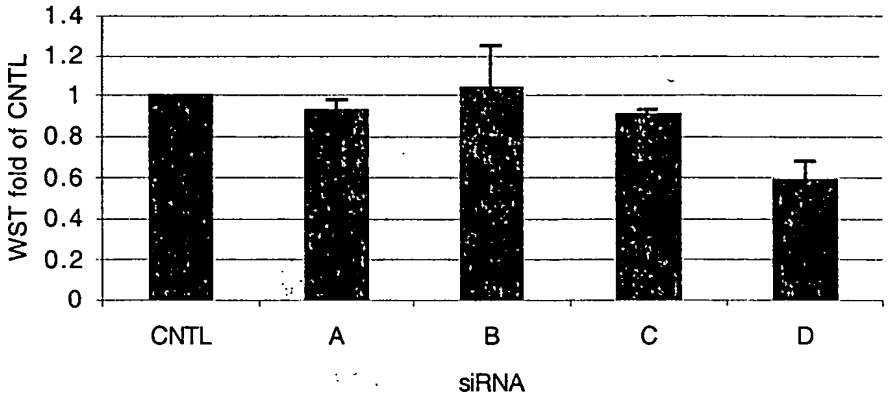

FIGURE 19

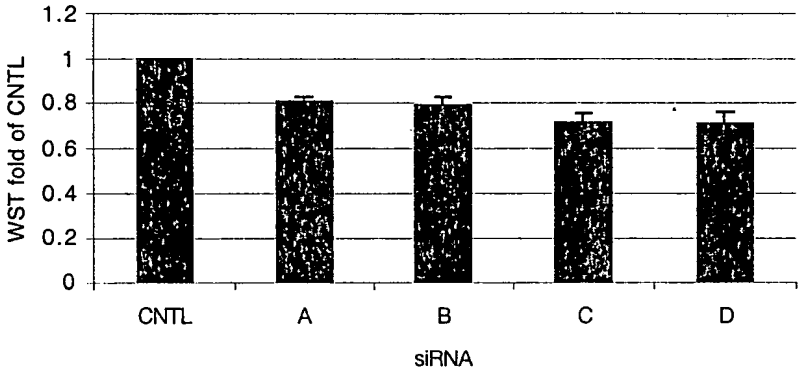

FIGURE 20A

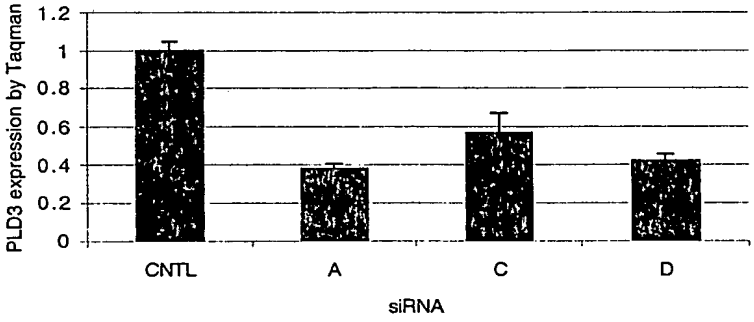

FIGURE 20B

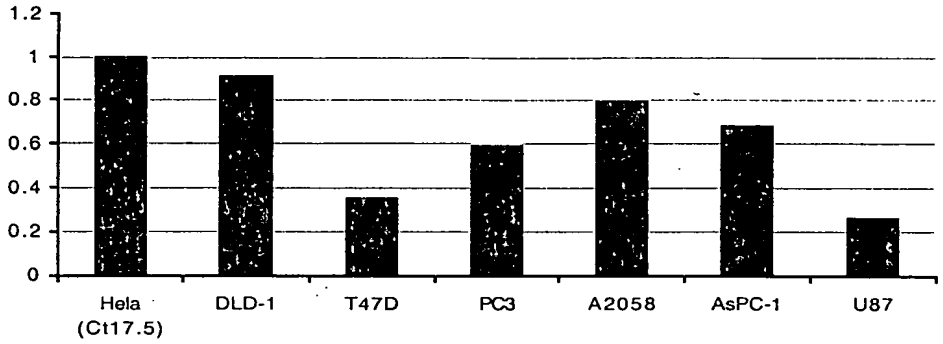

FIGURE 21

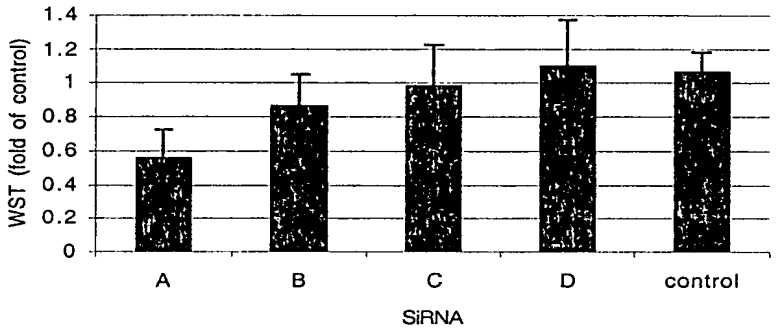

FIGURE 22A

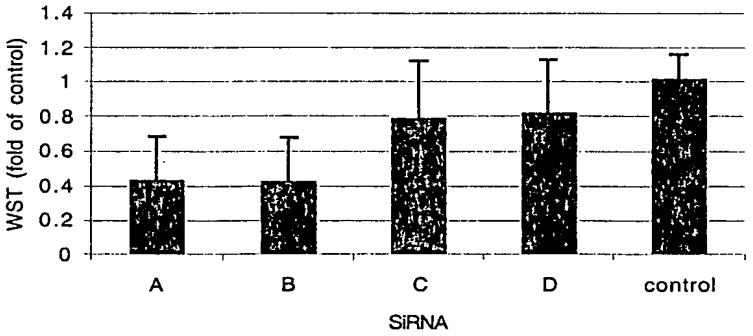

FIGURE 22B

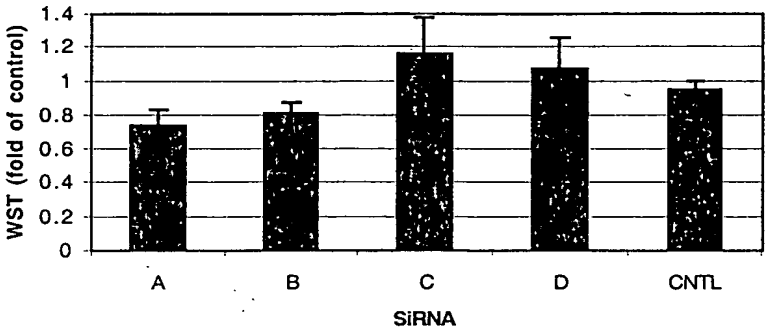

FIGURE 23A

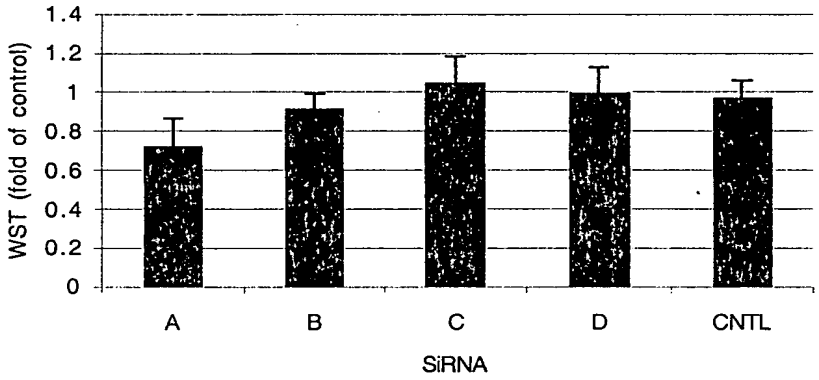

FIGURE 23B

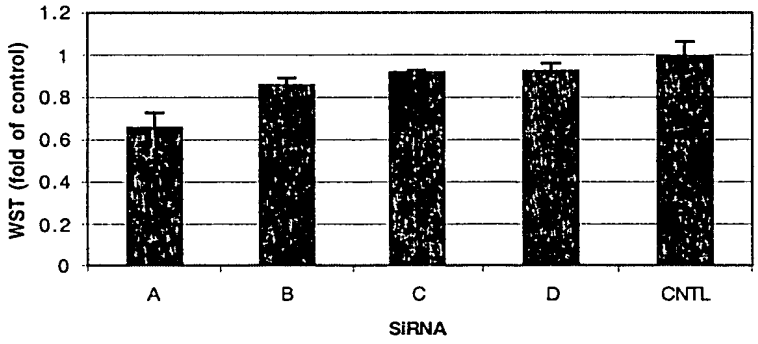

FIGURE 24

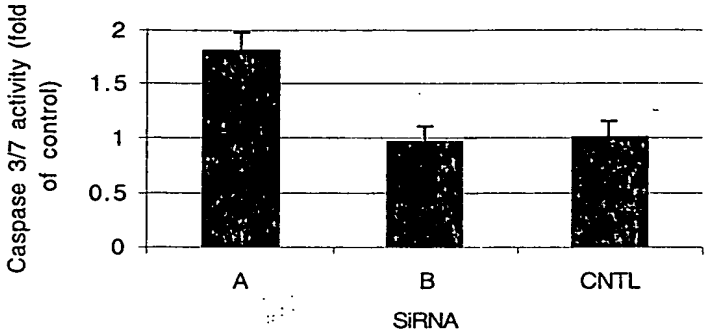

FIGURE 25

FIGURE 26

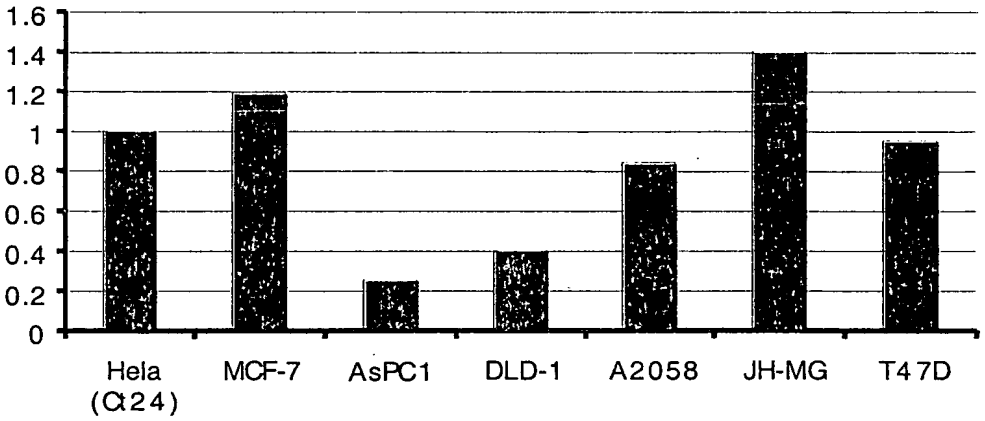

FIGURE 27

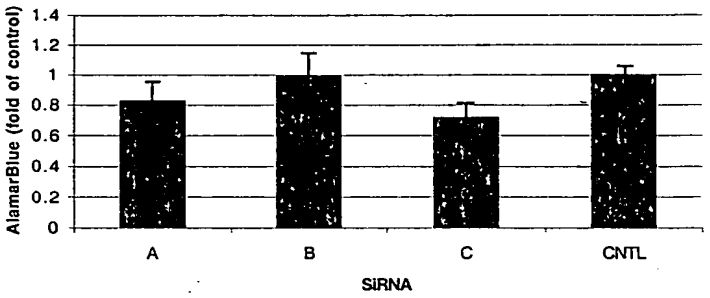

FIGURE 28A

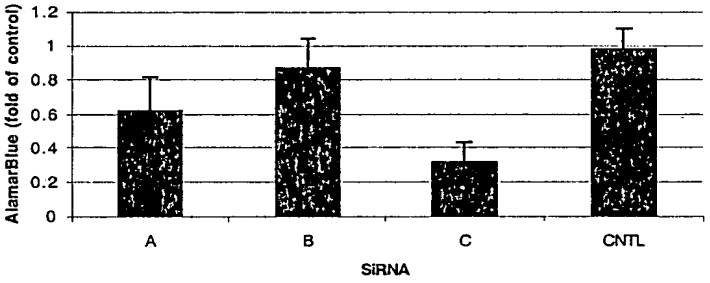

FIGURE 28B

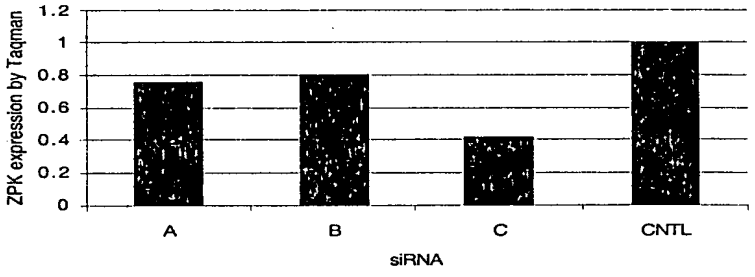

FIGURE 28C

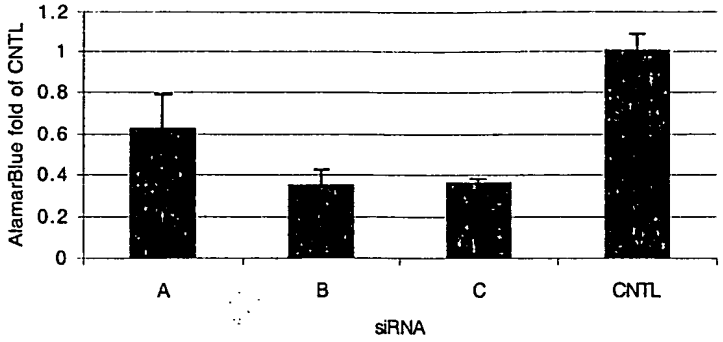

FIGURE 29A

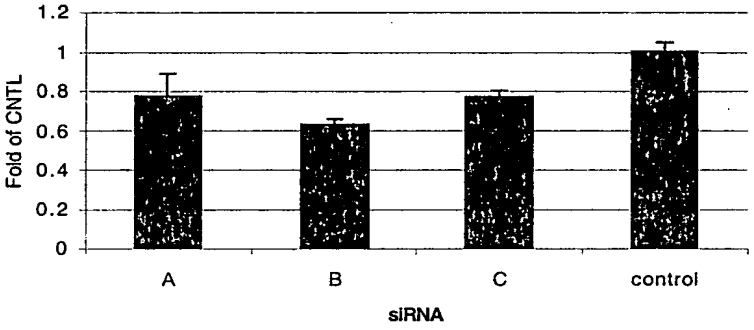

FIGURE 29B

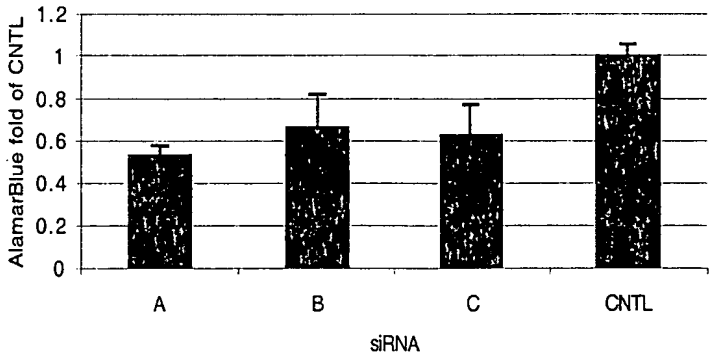

FIGURE 29C

HCT116

FIGURE 30A

PC3M

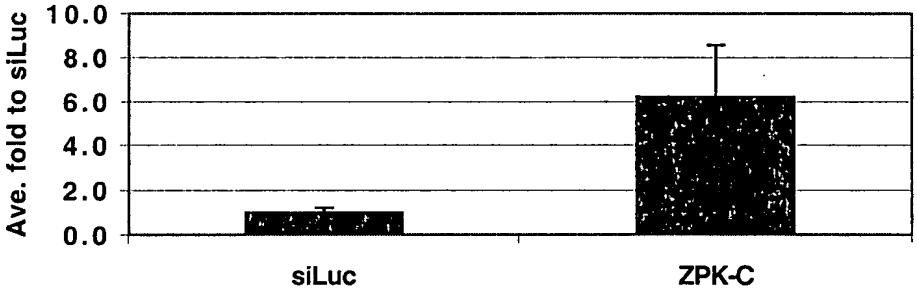

FIGURE 30B

MDAMB231

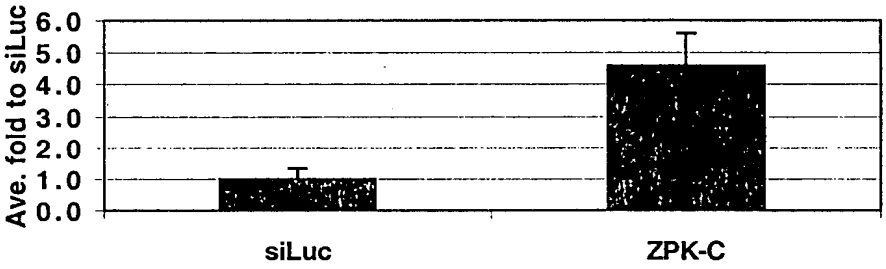

FIGURE 30C

ZPK Variant 1 DNA Sequence (SEQ ID NO:13)

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gtctacccta agtgaggcat ccatgcgcaa gctggaccca gacacttctg actgcactcc     180
cgagaaggac ctgacgccta cccagtgtgt acttcgagat gtggtacccc ttggtgggca     240
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cagtgtcctg cagctacatg agcaggatgc agggggccca gggggagcag ctgggtcacc     360
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cctggacctg cagtgggtgg gctcaggggc ccagggtgct gtcttcctgg ggcgcttcca     600
cggggaggag gtggctgtga agaaggtgcg agacctcaaa gaaaccgaca tcaagcactt     660
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ccgccctgtc acccctcct tactggttga ctggtccatg ggcatcgctg gtggcatgaa     840
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caacagcgtt gatgccttgc ggcccccagc ttcctccct ccatgaaagc cactcgtatt    2760
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FIGURE 31

ZPK Variant 1 Amino Acid Sequence (SEQ ID NO:14)

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LEGLFGCLRP VWTMIGKAYS TEHKQQQEDL WEVPFEEILD LQWVGSGAQG AVFLGRFHGE     180
EVAVKKVRDL KETDIKHLRK LKHPNIITFK GVCTQAPCYC ILMEFCAQGQ LYEVLRAGRP     240
VTPSLLVDWS MGIAGGMNYL HLHKIIHRDL KSPNMLITYD DVVKISDFGT SKELSDKSTK     300
MSFAGTVAWM APEVIRNEPV SEKVDIWSFG VVLWELLTGE IPYKDVDSSA                350
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FIGURE 32